Notebook, N-08-07-08

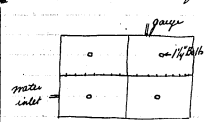
George E. Small

Reports on tests

Edison Concrete House

Diary in back of book

#1 Pressure test for plates – July 8



Plates bolted together with large number of bolts (1¼") sides closed with steel plates – at all joints 1/16" rubber packing 2 sides 1" apart.

Pressure (water) applied gradually and readings taken at center. The bolts (1¼") did not stretch at all.

lbs pressure	Diff. at each side
5	7/32
10	8/32
15	9/32
20	6/32
25	8/32
30	10/32
35	18/32

Second time pressure 40 lbs – Some plates cracked near center { rib only }

The ¾" bolts were not pulled – and no dowel pins were used.

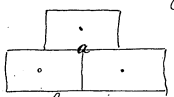
#2 Pressure test on July 11

Same plates, but rubber between plates taken out and oatmeal put on flanges. Dowelpins were put near ¼ of plates (at crossing - point)

Lbs pressure	Deff. each side	Final test mm
5	1/16	1/32
10	3/32	4/32
15	5/64	10/64
20	7/64	12/64
25	9/64	16/64
30	11/64	20/64
35	25/64	26/64

Since some of the plates had cracked ribs, test not absolutely correct.

#3 Pressure test on July 15



No doublepins
No rubber, but
wetmeal used.

Old plates used. —
Defl. measured at a

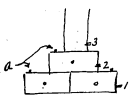
Pressure	Defl.	Defl. First test
5	1/32	1/32
10	1/16	3/32
15	3/32	4/32
20	7/64	13/64
25	1/8	8/64
30	9/32	10/32
35	11/64	26/64
40	5/16	
45	Cracked	

This test is not of much value – Mixing was not thoroughly watched – poor for this, clay no good

Per pictures 1 – 2 and 3

Corners not filled. R.H. corner, pail 1 filled hole, however made tub one bowl off while pouring and rubbed the concrete with a rod.
Bowls taken off after 6 hrs – Concrete fairly hard – smooth surface against plates
Plates taken away after 24 hrs – Stains shown on some plates, but surface generally O.K.
The concrete in the column packed away before concrete had set – so does not show on pictures.

#4 Pressure test on July 21



Six plates as shown – Sides 1' apart
Sides closed with 2" planks
Column 8"x8" inside – 40' high

Diaphragm gauges at points 1, 2, 3 & 4 (half height of column)

Concrete – 1 – 3 – 5 – regular clay
Gauge – 1 – practically no pressure
" 2 about 1 lb.
" 3 " 1 " when concrete reached in column – pumping up to 2½ lbs while pouring
" 4 – When concrete was above it, about 2 lbs – pumping to 3 lbs.

Concrete was hand mixed, properly not mixed well and not wet enough – flow not continuous – poured in by buckets full. Had small airholes at a – no tamping at all – Concrete stuck to column, when column half full, repeated blows with hammer made it come down some – gauge 3 at that time pumping to 10 lbs –
Plates did not deflect at all.

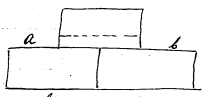
Material
Stone 3½" and under
Sand - Coarse and fine - and gravel
Void and loads 1.03 .47 .89
for Mat 3.2 bgs 11.3 cu ft 18.8 Cu ft.
Not enough material

No picture taken - test no good - wrong
faulty material

Corners not filled - abt 1" from top

#5 Test on July 30. -

Plate as before, but top open
Concrete machine mixed - Ransome #1
3 batches - Very wet - mixed 3 min. each



Not filled in ends of insufficient material and lost out of mixer

At a board left off and put in place when filled - and after water flowed off.
At b 1¼" hole only mid play - Closed when filled

For Plate and molds side removed after 24 hrs - Concrete not enough set
Block removed after 48 hrs - surface fairly good - at top layer formed abt ¼ - no stone at all - See Blocks saved -
found out later that Clay used was no good and actually contained abt 5% clay - stone too big a size

1 - 2½ - 5½

Box was painted and greased, but concrete stuck to it & in picture 19 showing how bottom stuck to mould.

Picture #5 - Block broken on Aug 5 - 3 P.M. - Mixture OK. - dec material thoroughly mixed and voids well filled - Stone clean to surface - Quantities Correct

#86 Aug - 4

1 Block mean 1 Cu. ft. Exact
1 Mixture per diagram Taylor & T
Sand 20 litre
Stone ¼ & ⅛ size
1 - 2½ - 5½
Used Clay of bank - ground roughly mixed by hand
Clay was N.G. - about 50% sandy clay Well sand & dirt
Used 3¾ A — little fit for T

Mixt running fairly, bottom stuck - See picture #4 - Box was painted & greased - surface not very good

√

*1 Test run Acc 1 - in Chemist room.
clay in ratio to cement — Quantities in oz.
Mixed about 5½ cub inches at the time

*1 - 1 - 2½ - 5½ clay ⅕ water
8.5(c) - 17¾ - 46.5(c) - ∝ 1¾ - mix 18

*2 - 1-3-5 - 8.5 : 21 : 42 : 1¾ : 15

*3 1-3-5 - 8.5 : 21 : 42 : 2⅛ : 16
¼ clay - 1055

*4 - 1-4 no clay - 10 water
8¼ - 27.5

*5 1-5 no clay - 8¼ - 33 (c) - 12¼

*6 1-4 ⅒ clay 8¼ - 27.5 - 10

See blocks - marked with number in Book 31
Water added test by judging appearance as
plastic.

Found out later, that for larger quantities water
should be a little less.

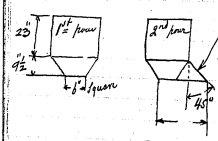
Form removed of Col #1 - on Aug 17 - 8.30 A.M. - Surface O.K. - Very few little cavities - bottom perfect - Some of the exterior layers stuck to form - Some of the corners stuck to box and some part brittle - probably on account of leakage through joint - explored moist around column after spraying surface with water. -

For strength test see page 12.

With the last pouring quite some water is evident was lost - making the concrete flow less easily

~~Trough~~ Batch #6 - Opening of mixing box - 86' 3'-6" from bottom of troughs.

Trough - 6" x 9" deep - 20'-0" long
Tank - 18" x 18" x



Flow Test on Aug 10 - #8 and #9

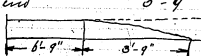
1st Mixed 1 Col. fuel - 1.3.5 - ¼
5.1 - 15.3 - 25.5 - 1.3 - 12.9 lb

Pours - 8.30 A.M. .172 - .516 .860 CF

Mixed thoroughly - took less water than in Laboratory test. since it appeared wet and ~~flowy~~ flowed easily. Filled Column, dimen 6" x 6" x 4'-0" (inside) - pumping heavily while pouring with standard pump stock (#1) Ufter 66½ 36 min 86½ 1½" water settled out -

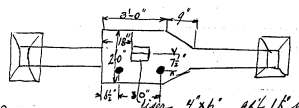
2nd Mixed 8 Col. fuel - Same prop. - for arrangement of test to fuel. #6

1st pour - grade of trough 3° - flowed clear to the end - completely filling trough without pumping Set concrete back in mixing batch - mixed a little - cleaned tank & trough - placed trough level - poured again - concrete flowed well - but overflowed the side. - put concrete back again - covered trough on top and poured again. - pumped in tank while pouring - first with pump stock #1, then with old worn - the latter no more effective trough of flow - total 10'-6" - (Stone Carried tapering end 3'-9" clear to the end of the flow.

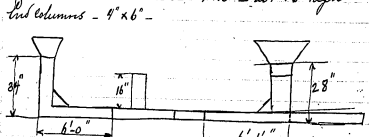


For test # 10. — Same as pict. # 7 except used large tanks as per pict. # 6 on lefthand side.

Changed lefthand side mud to finish column as shown on pict. # 7 between tests 10 & 11 —



Test columns - 4" x 6" - 28½" 18" high



Wash holes - # 160 gauze - hole 3" dia.

Tops not clamped at 4 bottom - boards now old and dry and cracked while pouring, allowing some Concrete to flow out - This is clearly to be seen on pict # 8 -

Tests 10 & 11 All hand-mixed 89

Nov 8 Flow tests on Nov 13. — at 7 3 P.M.

For arrangement see picture # 9

1st Mixed 2 cub. ft. in each box - 1-3-5-1855-3 used on left hand large mortar tank (same as on picture # 6) ; flow was perfect - 2 flows met at center and no trouble experienced in mixing. — Box not quite filled —

2nd Put Concrete back in boxes - added 1 cub foot of material to each side and added 3 qts Clay - mixture to each — This was done since some water was lost and the mixture was stood some more. Mixed thoroughly and poured 11 (A Thirty Minutes) gate simultaneously — flow O.K. — very thin Completely filled and overflowing in 2 columns pumping in each end column — mix standard pumpstick # 2. —

Tops removed Nov 14 - 9. AM. good surface — very few little air holes — under gauze perfect & piece best of all — especially near gauze — Concrete very good by appearance — and fairly hard — Stone near surface & tops everywhere — Very little water rolled out — at 5:30 all water was gone from tops of 3 columns and 2 holes with gauze. Very little cement particles had sifted through gauze.

Pictures taken before and after removing tops. —

For col. # 1. See page 8.

Forms of Col 2 - 3 & 4 removed on Aug 19 at same hour as pouring
All surfaces O.K - very few airholes - about corners Same remark as for col. # 1
Cut off 2 - pieces of each column - after marking off line with old chisel and heavy hammer, made deep groove and after a few heavy blows, the Columns split pretty near exactly on the marked lines
Squared top & bottom off to 6"x6" for test
Result of test see test # 15

Strength test on Aug 13. # 12

Column # 2 - poured 4.50 P.M
1 - 3 - 3 - 6
.216 . .648 .648 sq - 1055 - 3½
Mixed thoroughly by hand - placed fine - Little water settled out.

Col. # 3 - poured 5h 15m P.M
1 - 3 - 4 - 6
.192 = .576 = 768 - 1055 - 3
Same remarks —
Some more water settling out

Col. # 4 - 1 - 4 - 4 - 6 poured 5h 30m P.M.
.169 .676 .676 1055 - 3
Same remarks
Little water settling out. —

All Columns same dimensions as # 1 —

All Columns placed out of the sun and top covered with bags & boards. —

#13 Aug 19

Tried Ransome mine — test an absolute failure on account of mines. Cannot get the right degree of thinness — all the best medicine lost out of the discharging opening — —

#14. Compression test Aug 18. —

Used hydraulic press - plunger 2¾" dia - made test piece as accurate as possible - grinding the surface on emery - disc of necessary.

	Age -	Cracks -	Crushed -	Ele per sq. inch
1 -	8 days - in mould	132	218 lb.	Piece of column #1. (Bottom) sides of column sides bottom & top
2 -	11 days - air	288	288	Block #2 - test #7
3 -	"	390	845	" #6 "
4 -	"	150	775	" #4 "
5 -	5 days	198	265	piece of R, of test 11 pict. #8

#1 - Jupably damaged or cracked when testpiece was cut from column. —

Press registers in tons –
To find press. per sq in $\frac{\text{gauge press} \times 2000}{\text{area of block}}$.

#15 Compressive Test Aug. 19

Used hydraulic press in storage battery plant. plunger 5" dia

	Age	Lbs per sq. inch Cracked	Crushed	
1	6 days in mould	194	334	piece of col #2
2	6 "	334	334	" " " #3
3	6 "	208	250	" " " #4
	Press in laboratory			
1	6	302	302	pc of col #2
2	6	254	254	" 3
3	6	218	218	" 4

#16 Aug - 27
Laboratory Jam.

No.				
1	6 + 11	206	255	Col #1
2	6 + 8	330	357	" 2
3	"	316	316	" 3
4	"	204	248	" 4
5	8 + 14	246	246	L4 of test 11 6 6

17 Sept 1 4-5 P.M.

Used cubes - hand-mixer - Very satisfactory except gals which had changed. Trial mix a little ~~V~~ -

	Poured	6x6x6	Cubes	all 3	all 6 - 3	
1	1-3-3	.113	.339	.339	8½	6¼
2	1-3-4	.1	.3	.4	7½	6.25
3	1-2-3	.133	.266	.399	10	6.25
4	1-3-2	.129	.387	.258	9½	6.25

Revelled 7pm next morning - Considerable H

Used hand mixer A

16

#18 Expt. 3

Determined S_4 of different mixtures

Ø A.	
3 3/4	
	6
	D.
	P_{th}
	1
	1
	1
	1
	6n
	Pr

#19 Tests on Sept 4th —

C - 3

Mixed 1-3-3 with Cube for Column mid ornament #1 - Cub. Cont 12.29 Cub. in - made for 1300 Stood 2-5 P.M. Pumped 4.83 grs .48 cub/ft & ft - 9 @ 11 1/2 Limeburn burned dry - this was also noted in Test #17 and test 12 - Cl. #2 - This spec. mixture can stand more water. Box was not made according directions. The ornamental side was ordered thus and was made

Poured 16 testcubes as follows — {#. of each}

#5	1-3-3	3 35	.339	.334	7	3.10 P.M	{two days}
#6	1-3-4	2 98	.3	.4	6½	3.35	
#7	1-2-3	3 96	.266	.399	6½	4.5	
#8	1-3-2	3 83	.387	.258	8	4.35	{two days}

all C - 3

Found on Column #1 on Sept 8 - for account of faulty Construction of moulds, top shoved aside a little the covering Staves - & face Cornice & points broke — Ornamental side had some blowholes - other sides smooth - mixture was too dry. 4/p. finished the 13

All cubes 6" × 6" × 6"

Pres. per sq. inch = $\frac{37.4 \times P}{36}$ = 2.43 P

P = Obs. pressure

#20 Sept. 8

Cubes of test 17
all 6 3/4 + 0

121 117 ~~214~~ 133	~~149~~ 124	224 206 243 238	228	#1
224 182 170 ~~87~~	~~168~~ 192	238 218 182 182	205 222	#2
~~214~~ ~~158~~ ~~85~~ ~~158~~	~~154~~ 1	214 194 170 ~~158~~	~~184~~ 193	#3
~~308~~ ~~267~~ ~~243~~ ~~243~~	~~265~~	308 267 243 255	268	#4

#21 - Sept 10.

#28. Tested cubes #5. 6. 7 & 8 for Compression (of test #19)
All stand. cubes - hydr. press in lab. used -
Age - 6 days. -

	Cracked	Crushed	Average Cracked	Average Crushed	Remarks
2	158	243			
a	230	255			
a	~~255~~	255	208	251	Cube #5 - test #19
a	230	250			
	~~141~~	194			
	182	194	~~173~~	194	Cube #6 "
	~~144~~	194	152		
	122	194			
	206	273			
	~~215~~	273	~~244~~	275	Cube #7 "
	243	280	235		
	255	273			
	~~146~~	146			
	~~152~~	158	~~134~~	161	Cube #8 "
	~~170~~	182	~~109~~		
	~~97~~	158			

#32 September 11th

Mixed 1-3-3 with cubs mixed for columns with ornament #2 Columns contained 612 cubes - Mixed for 7:00. Poured 2 P.M. pumped. Flow fine.
3.6 Qs .261 S+St 5.7 Qs. 7½
8 - 8½

Poured 32 testcubes as follows (4 of each)
16 - cubes - #5, 6, 7, 8 all 1-3-3 3.5
3.3 Qs - .839 Lbs/Sq - 7¼ Qs

#5 - b - 7½ - 2:30 P.M. - flow O.K.
#6 - c - 6½ - 2:45 " " "
#7 - d - 6 3:05 " " " - little too wet
#8 - e - 5 3:25 " " " too wet
mix #8 - Stone was not carried to top as well - Impossible to account of lack of clay - Shrinkage excessive

16 - cubes - #9-10-11-12 - all 1-3-2 3½
3.83 Qs - .387 .258 1/7 Qs

#12 - b - 8½ - 3:50 P.M. - very dry - flow not O.K.
#11 - c - 7 4-10 " dry flow better
#10 - d - 6½ 4-35 " - Sand & little water - flow O.K.
#9 - e - 5½ 4-55 " " "
Stone thoroughly well carried in all these.

Formed Columns (ornamented) #2 - Age 3 days - Surface O.K. - very few little blisters - in some places liner stuck to mould - [illegible] did not oil mould before lowering it - As a whole, ornamental work came out good - See picture - Brackets fairly hard - and corners good & sharp.
See picture Nos 11 & 12
left hand Column

The last cube of each, marked Q - not pumped

The first cube of each, marked A. not pumped

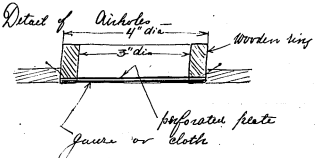
*28 Sept. 16

Pound Orn. Col. *3 - same as *2. but without pumping - mixed oiled

Opened Sept 17- 10^h A.M. - All bolts stands but five - a few blisters in bluff and sides - but in general very satisfactory - smooth surface. —

3p. See picture * 11 & 12 Light hand Column

Detail of Aicholes —



Perforated plate # 1
holes - 1/8" dia - 3/16 ctrs thus

Perforated plate # 2
1/16" Steel iron
holes - 1/4" dia - spaced 1/2" ctrs thus

See fol. # 14 for general arrangement
and fol # 16 — showing trimmer & blades

#24 September 15th

Mixed 1-3-3 with Ransome mixer for flow test 6. cc
Poured at 11.30 A.M. [redacted] - b - 3½
Mixture 1.3 - 3.9 - 3.9 21 G 7½
Mixer mks O. K. — dumps quick, spills very little and mixes thoroughly
Stone perfect — stone well distributed
Arrangement of box, etc same as for test #11 — except for central part. The box of this was provided with 9 holes with gauze and no riser. See picture # 9 & 10

Hole #1 — #150 gauze — perf plate #2 B
" #2 — Triple muslin " A
" #3 — Triple Cheese-cloth " A
" #4 — Single " " B
" #5 — #40 gauze " B
" #6 — #120 " " B
" #7 — Double Cheese-cloth " B
" #8 — " " — perf plate #1 A
" #9 — #80 gauze — perf plate #2 B

All marked O. K. — the 3 marked A did not let any cement through at all — Opened box at 2 P.M. — surface fairly well — Quite some aicholes — riser seems to be necessary — stone everywhere present —

#15 Sept 8 - 17

Tested cubes of test 22 - mix 1:3:6. press in Lab.

Age - 6 days

Box	Crushed	Crushed	Average Crushed	Average Crushed	Box	Crushed	Crushed	Average Crushed	Average Crushed
5	172½	189			9	~~267~~	262		
5	158	170			9	255	255		
5	170	182	172	185	9	262	262	~~266~~	268
5a	182	199			9a	284	292		
6	164	182			10	~~250~~	255		
6	154½	182			10	201	248		
6	170	182	159	182	10	230	255	~~235~~ 229	259½
6a	158	182			10a	255	280		
7	121	145½			11	187	236		
7	145½	158			11	212	238		
7	152	152	150	163	11	238	250	218	245
7a	182	194			11a	236	255		
8	194	206			12	206	243		
8	189	206	~~196~~	206	12	~~267~~	267	~~231~~	253
8	194	206	159		12	~~246~~	246	206	
8a	~~206~~	206			12a	206	255		

26 Sept 18.-

Poured von. Col. #4 - 1-3-2 C - 3½
2.96 .1 .3 .2 5½ 5-7
Flow Albright - Could stand some more water time 2-50 P.M

Poured 16 testpieces -
all 1-3-4- [redacted] 3

#1 - B - 7½ - 3-15 P.M - flow OK

2 - C - 6½ - 3-35 " "

3 - D - 5¾ - 3-55 " "

4 - C - 5 - 4-05 " "

Poured first one of each in A - not tamped.

Levelled off tops on Sat. A.M. 9 O'ch - Sept 19

Poured Col. #4 Sept-21 - 9. A.M. - About half of the relief mark stuck to mould - Smooth side Head Joint surface - moulds had been oiled slightly before pouring. pried. #13

#27 Sept. 21

Made flowtest at 2-30. Had the top of Centre box changes — no gauge, but over 4" x 4" in Center. Had reinforcement placed as shown on sketch. # — Used Contes.

1 - 3 - 3 - [redacted]d - 3½ 1.51 .4.53 .4.53 .5½ 9

Made 7 Ce[redacted] — lost some water on account of small hole in mixer. Flow O.K — Reinforcement did not seem to hinder much — opened tops at 9-35 and mixed concrete to save time — — Worn few buckets more in tops and some water — might have to use a few bolts with gauze to take care of water.

Poured 8m. Col. #5 — Same as #4 — 3½

1 - 3 - 2 - [redacted]e 2.98 .3 .2 5½ 6[redacted]

Flow O.K. —

Opened Column Sept 24 - A.M. —

Surfaces all very good — Relief work nearly perfect - only a very few places little Corners stuck to mould. —

Pict #13

the picture #15

*28 Sept - 23.

Made flowtest at 2-30. - Had reinforcement - same as test 27 - and had riser and 4 gauge - holes [see sketch]
1 - 3 - 3 [redacted] - 3½ 1.51 4.58 4.58 7½
Made 7 cub. feet. - Flow OK - but lost considerable in account of loose board in bottom of one of pouring - risers. - After fixing board kept concrete in each riser. Flow was fine - and NOT pumped at all - Water came through gauge and concrete came up through in riser.

Opened test 24 - A.M. - Seepage OK - few airholes -

29 Sept - 24

Tested Cubes of test 26 - Age 6 days

Box			Average		
1	206	243			
1	238	262			
1	~~180~~	300	~~246~~	261	
1a	~~258~~	238	222		
2	190	214			
2	190	214			
2	~~186~~	206	~~198~~	210	
2a	~~206~~	206	190		
3	138	250			
3	230	262			
3	268	280	~~246~~	260½	
3a	230	258	243		
4	~~73~~	~~194~~			
4	226	238	~~196~~	~~212~~	
4	226	226	223	231	
4a	218	230			

Age	Cubes	Cubes	Remarks
6+29	426	486	Pier of Column #1
6+36	547	559	" " #2
6+36	~~445~~	595	" " #3
6+36	~~444~~	482	" " #4

30 Sept. 25

Source materials #1
1 - 3 - 2 - [redacted] - 3/4
2.98 .3 .2 3/4

backing of 1 to 2 Cement mortar

Flow perfect - little pumping done -

Opened Sept 28 - Surface not perfectly smooth but absolutely no holes -
Draw 6-16.

picture # 13

Opened Oct. 5 - 9 A.M

pouring end	Surface gen.	Natural
1	good	
2	medium	Sulph. hydr.
3	good	lime
4	good	polished
5	good	Sulph. Amm.
6	No "	Sulph. hot.
7	"	Tallow
8	"	Graphite
9	rotten	Albany grease
10	"	Kerosene "
11	"	Machine oil
12	medium	Vaseline
Tissue end	good	

The smooth outside film of the surface seems to adhere to the copper and make the knees look granulated. This granulation the finest, i.e. least visible, where marked good. Three places also least disfigured with pinholes - only very small ones, hardly noticeable.

fruit #19

#31 Sept. 29th

3 P.M.

Poured watertable #2

1 - 3 - 3 [redacted] 3½ 700 lbs of mix.

2.6 .261 .261 7½ [redacted]

The flow was O.K.

Used same box as #1 but had surface of copper treated as follows.

	12	11	10	9	8	7	6	5	4	3	2	1	

#1 Natural rubbed with clean waste.
#2 Sulphonated hydrogen not rubbed.
#3 White waste wiped slightly " "
#4 Polished lightly - vaseline applied after cleaning with soap
#5 Sulphite of Amm. rubbed.
#6 " " Port " "
#7 Tallow " as possible, down as much
#8 Graphite (dry) polished " " " "
#9 Albany grease " " " "
#10 Kerosene oil " " " "
#11 Machine " " " "
#12 Vaseline " " " "

The sides of the box were oiled well. Clay was left on surface at #1 + #2 in small sections - this clay was used as dams when applying sulph. hyd.

Oct. 6 –

Took moved off – stuck a little first, but by hammering with a monkey-wrench on the back – got it loose – Float moved through, to locate top at bottom Surface perfect – all toolmarks (from planing tool) in surface – and perfectly smooth – put # 13

#32 Sept 30. –

Poured in channel – Beam #1 tapers like planed – ends closed – top open placed boards on top and kept on by standing on them while pouring – took boards off about 1½ hrs after pouring –

Poured at A. Had board B on also, let Concrete spread – put on board C – Butting against B, let Concrete had filled beam. Placed iron D between boards – Concrete done in D – pumped a little in A after pouring – Surface dry in when boards were removed – went at B – end of beam (Corners) finished from iron the rest (marks X)

1 – 3 – 3 – [redacted] – 3½ – [redacted] 300 cc

2.98 .3 7½ 6.5 11-18 P.M.

Beam – 7'-6" – deep 1½" – wide (ins) 5½" at top

Levelled top of Beam from – After Iron cutting with Grooves the trowel, Mortar mixed wet and used like to make a perfectly smooth surface

38 Rel. 3

Found Cornice #1 - 2460 On 1-3-3-6 3¼
.3 .9 .9 7½ .19 9-45 AM NP
F perfect - Could have been a little less A -
H quite some.

Found Rel 9 - Ornamental mds - mostly all OK -
Present at bottom - this caused on account of
ten Sunnie a space between Blocks - Surfaces
at by flat space N.G. - other surfaces
perfect - nothing any holes. — pic. #20
Se pic #22 - the mould for the cornice -
showing the reverse dentals, which broke off
in Cornice #1. -

Opened beam Oct 12 – Surface rotten all stuck to beam surface and very hard to get mixed off concrete – must probably EC – No difference between ends of beam

Opened waterable – not very good – lers H than before – but still sand – between gauge mark – smoothness of surface files stuck to copper – at both ends – Init. 3/19

#34 Oct 6

3-25 P.M.

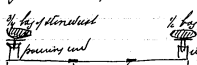
Poured beam #2 – Had on half of channel painted with a very thin lime wash. Had boards, same as for test 32, but clamped on. –

1-3-3-$\frac{3}{4}$ 3½ 800 cu 2.98 .3 – 5 – 6.5

Poured waterable #3 4 P.M.

1-3-3-$\frac{3}{4}$ 3½ 800 cu 2.98 – .3 – 7½ – 6.5

Cleaned surface thoroughly with Potash 33% – Very rich sand & water. Use with benzole. Gave half of surface 2nd of Muriatic Acid – Extremely thin – just noticeable – Had 2 holes made with #40 gauge and, after pouring, put block in wire to pouring riser – just fitting in them – See sketch –



Opened, set at wire end, some settlement occurred in first half hour (about 1/16") – none at other end – but on last time mate in gauge – holes came up a little bit –

#35 Oct 7 - P.M.

Pours in Spurrita - lava (Japanned) -
1 - 3 - 5 - [illegible] - 8½ - N°.

36. Oct 8 4 P.M.

36 Cubes 1-3-5-3½
24 of B for different age test
First mix 2700 cc — too much A by mistake
Added 1/10 of all aggregates, mixed same time again —
not thoroughly mixed — mixed 2m longer —
O.K. but T — observed quite some H next day
Rolled off tops next morning
Twice .27 .81 1.35 6 21¾
4 of each of the following mix 2.7 .27 .45 7½
c — 5½
d — 5
e — 4¼
Seemingly all a little T —

Opened beam Oct 17 - A.M.
All stuck to beam - best surface on parts oiled with brush - next the ones oiled and rubbed dry - while the untreated parts were rotten.

Opened waterable - surface not much good but best, where copper was oiled with brush next - where oil was applied and rubbed dry again - The first part (oiled with brush) did not stick at all, but was sweltering The film (outersurface) stuck to copper where untreated, less to oiled and rubbed and not at all where oiled with brush
H much less as before
S_2 well distributed throughout

Finished 19 -

#37 Oct 12 - P.M

Poured in beam - divided in 10 partitions Each half partition oiled - every other one rubbed dry again - the other applied as thin as possible with a brush. No C in mix but stirred differently at first 1 m - each, up to 10 m - Between each mix 1 m - Mix a little T - H most with first 3 partitions. Seemingly after 3 m - S_2 supported better. Had material for 1600 cu (beam & waterable) - When pouring last partition - poured waterable also - Had some one Centervisor, (between 2 pours) - ½ of beam cleaned and rubbed - ⅓ same - When oiled & rubbed dry - ⅙ - same - oiled as thin as possible F was O.K. - S_2 supported O - A. seems of O - When poured - applied pressure in 4 risers, 2a in end - riser - and 2a in pouring riser Gauges seem to take good care of A
331 - 3½ - no L
Tested Cubes #1 - test #36 - 4 p

85		97		
~~84~~	~~68~~	~~68~~	~~89~~	6
60.8	69	109.2	99.5	
60.8		92.2		

138 Oct 13

Opened typewriter cover - came out very easily - surface absolutely perfect - very smooth and "polished look" - Ref. # 17a18

Tested Cubes #2 [test 36] actual 5 P.M - 5 p.

~~117~~		121.5		
93	93	121.5	120	C
85	85	121.5		
91		117		

#9 Oct 14

~~Tested~~ each 3 - 10 - 11 - 12 of tel 36. all 6p.

#3 - b - 138.5, 116.5, 126, 109 } 122.5 ; 148, 126, 141, 121.5 } 134

#10 - c - ~~103~~, 97, 109, ~~85~~ } ~~96.5~~ 103 ; ~~123~~, 126, 124, ~~124~~ } ~~114~~ 125

#11 - d - 133.5, 121.5, 109.5, 109. } 117 ; 146, 129, 121.5, 121.5 } 129.5

#12 - e - 103, 91.5, 127.5, 109.5 } 107 ; 116.5, ~~120~~, 133.5, 121.5 } ~~112~~ 124

'40 Oct 15

Opened after 6 days - most firm mix stuck to mould - fuel. # 13

Poured Orn. Column #6 - Had Copper pasmad. Surface of Cyprus fairly met - a few spots where pasmaning did not cover it - (Hardwater)
331 - 6 - 3½ - 800 cm. - 3 n
Emulsion O - F also O - NP -
Next morning top was quite hard already

Poured 20 cubes - for age - test
431 - 6 - 3 - 3 n.
Might stand some more A - Not much H - Next Optimum (24 9.) tom rather have to end off next morning.

Opened 4 days - to pul. # 20 - Had the dry mix between dentals filled and used risen on (mark clearly seen in picture)

Poured Crown Cornice #2 2400 cm
331 - 6 - 3½ - 4 n.

Tested cubes #4 - 6. - 4 f. - test #36

109	112	170	~~184~~ 177
97		~~233~~	
109		170	
133.5		182	

Filled 2 boxes with rest of cornice mix -

#41 Oct. 14-15 x16

Determined S.G. of LA and found Curve giving constants for each quantity A

#1/2 Oct 16—

Tests under #5 — 6 — 8 f. — Lot 36

133.5	144	194	184
146		182	
146		190	
150.5		182	

Oct 17

Tested Rubber #6 — 6 — 8¾ ft. tested 36

158
134
158
163
} 153¼

190
~~175~~
~~182~~
190
} ~~178¼~~ 190

44 Oct 19

Tested Asbestos #9 (2) & #3 11 p & 4 p Tested 36 & 40

194 } 164 219 } 226
134 } 238 }

~~134~~ } ~~107~~ 165 } ~~147~~
61 } 73 ~~122~~ } 155
85 } 134 }
~~146~~ } 165 }

845 Oct 20

Testes cubes 13 - test 40 - 5p.

146		195	
134	149	~~128~~	~~128~~
~~148~~		185	192
158		195	

#46 Oct 22

Tested 4 cubes of test 40 %.

194		~~202~~	
214	~~197~~	218	~~207~~
~~165~~	203	~~190~~	218
202		218	

Poured 36 cubes – time to L test
321 3
24 of 6 – 4 of each C, d & e
Could have some more A – not much H.
Rivelled top next morning & made smooth surface with neat cement paste
Top very hard. –

2 cubes failed – one ½ 6 – ½ e mix
one ½ d ½ e "
will run 6 f – and 10# for long time

#47 Oct 23

Fences 4 Cubes of Lot 40 8p.

~~209~~		255
218	~~482~~	262
218	220	255
224		255

257

#48 Oct 24

Textus 4 cubes 1 leaf 40 8¾ℓ

288		250	
~~###~~	~~###~~	296	261
224	231	248	
231		248	

#49 Oct 26

Poured 23 cubes for time
331 6 3½
one box for H- measure

Tested 4 cubes of test 46. & 2 of 40
4/5 11/5

219, 267 } 243 — 292, 280 } 286

~~336~~ 316, 328, 328 } ~~326~~ 322 — 340, 362, 352, 352 } 352

Next morning cubes covered off with neat cement — latter kept with 1-1 mortar

50 Oct 27

Texas 4 cubes of ten 46 — 5p

340
340
340
340
} 340

443
389
~~344~~
400
} ~~400~~ 444

151 Oct 28

Verses 16 endes of Leu 46 — 6p.

b	450 462 425 473	453	490 523 478 552	511	Verses c 105–175
c	all 450		505 ~~477~~ 466 466	~~479~~ 482	
d	437 420 486 442	446	462 445 510 478	473	
e	418 430 405 383	410	~~432~~ 442 445 ~~405~~	~~431~~ 444	

Opened Cornice Nov-2- 3¾ p -
Surface O - Some parts broke off - properly stiffly
undercut - and mould heavy to handle -
few small Airholes - piet. #20

Opened Waterable Nov-2 3¾ p.
Surface O - but the greater part of the deeper
Ornament stuck to mould and broke off -
No Airholes - piet. #19

#52 Oct 29 -

Poured 22 Cubes for B test
231 a 3½
Could stand more A
Levelled bases directly with plastering trowel
Next morning faced ends and levelled
with Cement mortar 1-1

Poured Cornice 13 - Japanned - No. waxed stripping with
231 a 3½ flat hands
After filling moved Assigned Layer stone on
Concrete - and hot to press the stone down -
to get it under the emulsion

Poured waterable #5 Japanned - on end
321 6 3
Can have more A. - after pouring -
P - about 1'-0" deep - feet imprint at bottom
poured waterable on end. - No pieces acts
pulled - Lots A act only.

Tested 4 Cubes of test 46 4 p.

469	469#	535	~~544~~
473		620	
450		~~405~~	567
476		546	

#53 Oct 30

Series	# cubes of end of	test 46	test 49	# p.
	523		620	
	558	537	627	610
	497		583	
	570		608	
	133		146	
	~~146~~	~~143~~	146	158
	~~158~~	133	170	
	133		170	

#54 Oct 31

Series	#	of test	46	49	# p.
Wrapped C					
$9\frac{3}{4}$ r-76 s	~~586~~			~~583~~	
	~~573~~	~~563~~		~~583~~	~~590~~
	~~523~~			~~545~~	620
	558			620	
	158		~~140~~		
	146	155	~~76~~	~~177~~	183
	170		~~76~~	177	
	146		~~76~~	190	

Opened Cornice Nov. 10th 8 p.m. Surface very nicely finished. 1 or 2 small holes & moulds came off very easily — removing, supported moved on 4 corners, and topped slightly and let concrete drop off — one place damaged — see picture 21

Opened Column same time — surface not bad but greater part of fine work stuck to moulds see picture 21

Nov. 2

Poured Cornice #4 — plain
321 6 3 P
Can stand more A.

Poured rotatable Orn. Column #7
321 6 3 P
Can stand more A.

Tested 2 cubes of test 46 11 p.m.
Cracking not noticeable — 633 — 635 — Average 634 — 4/5 r. - 175

4 cubes of test 49 7 p.m.
208, 218, 202, 202 — 208
218, 228, 224, 218 — 222

4 cubes of test 52
85
Cracking not noticeable — very rapid — Heated & poured almost directly

#56 Nov 3

Texas 4 cubes - test 49 - 8p

~~216~~
214
218
~~186~~
} 216

243
243
231
231
} 237

and 4 - of test 52 - 8p.

73
78
68
~~85~~
} 76

97
102
85
97
} 95

#57 Nov. 4

Texas 4 - of test 49 9p.

~~206~~
~~144~~
231
219
} ~~213~~ 225

248
243
255
~~243~~
} 247

Average C - 12⅓ F - 163

Rivelled brass off Nov 6 - with Cement mortar
1 - 1½ it took .134 cufl. of cement.

#58 Nov. 5

Poured 37 cubes - B & L - A.M
631 3
25 of 6 - ¼ of each c, d, e.
one pieces with c, d and e for key B
Mixing for pied. 8 - found on that 3 h.
mos. not enough B - stone not separated - gave
it 6 h - and everything was O. - A. turned O

In afternoon formed plaster paris cornice on
apparatus moved - to determine if
mixed mixed down - and after about 30 min
setting took mixed off with little trouble
put 2 blocks of mat under ring mixed
(plaster at bottom) and capped lightly -
plaster cast dropped down - and cast was
perfect. —

Tested 4 cubes of test ~~46~~ 52 - 7 p.

194	178	206	~~204~~ 208
165		206	
182		~~170~~	
170		214	

1859 Nov 6

Tested 6 cubes — 4 of test 52 — 8 p.
2 " 49 — 11 p.

267	271	286	289
275		292	

230	237	~~264~~	~~287~~ 304
231		~~278~~	
243		304	
243		304	

#60 Nov 7th

Tested 4 cubes of test 52 — 9 p.

344	~~344~~	352	352
342		352	
340		352	
340		352	

#61 Nov 9th

Tested 6 cubes - 1 of test 58 - 4p
2 " " 52 - 11p

Amer. C. 1:3:5 r-175

95	95	109	112.3
97		117	
92		102	
97		121.5	

328	328	369	369
328		~~349~~	

#62 Nov - 10½ 10:39

Tested 4 - of test 58 .. 8p

121	113	55	130
99		~~46~~	
116		53	
116		58	

163 Nov. 11

Tests 16 each of Tet 58 bf

b - 126, 126, 134, 134 } 130 ; 175, 165, 165, 151 } 164

c 122, 109, 133, 122 } 122 ; 150, ~~133~~, 158, ~~133~~ } ~~144~~ 154

d 126, 109, ~~133~~, 146 } 127 ; 150, 150, 133, 158 } 153 ~~148~~

e 121, 122, ~~109~~, 121 } ~~118~~ 121 ; 153, 141, ~~133~~, 158 } ~~146~~ 150

#64 Nov 12

Tested 4 of #5-8 16

158	157	182	186
153		182	
153		192	
165		189	

Nov- 12

#65- Poured 28 cubs for A test

421 6 Used for first 8 - the new stone, but the line was much larger than our old stock, so poured same 8 as mid old stock. For F- 3/8 no test - no filing and looked O

Nov- 13

#66 - Tested 4 of #5-8 8/8

L		~~187~~	~~206~~
-		204	192
-		~~177~~	
-		187	

In test 65 in each H Cubs had over plate 1 and one C. - When pouring - all the C Came out perfect - none of the I - Cubes stuck to surface - probably new iron B.

Opened Cornices on Nov-19- and took pictures that same day.— Both came out badly, but varied very unsatisfactory- Greater part stuck to mould — most probably not enough dried- the #5 especially very bad- See pictures # 22

#67 Nov 13

Poured 12 more cubes - same as test #5 3⅞ to mush A - S. not supported enough - more in last part of pour than in first — Limit (safe) - 3⅞ or 3½ Same mix as for #5

Pour Cornice #5 - G and #6 - I

4 2 1 -6 3¾

#5 - N° #6 - P mix hands

Nov. 14

#68 - Test 4 of #58 9¾

146, 182, 158, 170 } 16 H. 199, 209, 194, 202 } 201

#69 Nov. 16.

Test 2 - of #58 11 p

158, 182 } 170 243, 238 } 240

Opened orn. col #8 Nov. 28 surface Q for all raised work while the rest was good and smooth.

#70. Nov. 17

Found palatable. #6
421 6 3 3/8 - M - F was V
and consistency of emulsion fine

also Orn. Col. #8
Same remarks. —

#71 Nov - 18.
Tested cubes of test #65

VIII new 198, 218, 194, 206 } 204
3¼ r. 17 s

VIII old 243, 228, 226, 214 } 228
8⅞ r. 17 s

IX 4¼ r. 17 s 170, 158, 165, 170 } 166

IX old - all 194
5⅞ r. 17 s

X old 214, 214, 206, 206 } 210
6⅞ r. 17 s

XI old 204, 194, 198, 212 } 202
4⅝ r. 17 s

XII old 206, 218, 214, 224 } 216
5½ r. 17 s

Paint

Plate	Whole Side	Kind of Paint	Surface	Remarks
1	Bugle	Morris's Enamel very green	poor	Hard to get off
2	"	Asphaltum	"	"
3	"	Morris's Enamel white	"	"
4	"	" plain	part of surface fairly good	"
5	"	Valentine's green paint	fairly good,	but indefinite of surface Hard to
6	"	Black Japolin	N.G.	peels & hard to get off
7	"	Morris's Enamel	"	hard to get off
8	"	Devoe's high gloss	good - not perfect	"
9	"	Mooney's Enamel Vermilion Enamel	"	Easy to get off - dry remark in for [illegible]
10	"	Varnished in oil	"	" - dull surface
11	"	Mooney's Black Enamel	"	hard to get off
12	"	Japolin	"	"
13	Finished	Japanned 2 coats	fine	mill "
14	"	" "	N.G.	"
15	"	" " 2 coats	Enamelled	"
16	Bugle	plain	poor	"

9 and 10 was the only ones, that fell off and 10 was very poor - the surface is dull, but perfect and so is 9 - although the ornaments titles & paint.

Opened # 8 - Nov - 23 - surface OK - foil looked black like foil 22 - 6 — part of leg and dental streaks. —

Opened last test on Nov 24 - and took picture — see report above

6

Nov. 19

#12

Varied cubes of test 64

XIII		XIV	
154 - 165	134 153 136 134 } 139	155 - 165	165 158 175 } 166

XV		XVI	
64 - 165	102 112 102 } 105	64 - 165	90 97 97 } 95

#13

Nov. 20. —

Poured 16 cubes for L test. — 421 - XIV - 4 b, c, d and f. — only b satisfactory - the rest required 6 m - to get a good emulsion and even than was not S and termed T

Poured remains #4 - I - 421 - XIV - b - M and #8 - G - same - but poured face down and surface first broken and was S mixed with B - L - A - then P. - On Nov 21 - took two prints remove and gave back a Burlap finish. -

Poured boxes for surface test - with plates and different paints - 421 - b - XIV

#74. Nov 23

Found 21 cubes for B test
ht 421 – 6 – XIII

#75. Nov 27

Tested 16 cubes of test #3 and 4 of #74

b { 219, 197, 214, 233 } 219
c { 214, 231, 206, 194 } 211
d { 238, 208, 241, 258 } 255
e { 231, 231, 219, 262 } 285

all – 8 4/p.

{ 187, 176, 190, 182 } 182 – 4 p.

#76 Nov 28.

Tested 4 cubes of test #74

b { 226, 236, 226, 221 } 22934 5p.

Plate			Opened Dec 4
2	Rough	13	Q - U
6	"	14	V - U
9	"	7	J - Same remark as before - Z
10	"	25	J - W - Suspect Z
11	Finished	11	Partly J - Center of plate Q - Mem J. X
12	Rough	4	Q
16	Upper Finished	25	Q
20	Finished	16	Q
22	Rough	10	V -
23	"	10	Q
24	Upper	10	Q

#77 Nov 30

Dated 4 cubes of test #74

8 ~~305~~ 294 ~~294~~ 7 p.
287 284
280

Opened corner #7 of test #73 surface Q suffocatedly on account of putting A on before pouring the concrete in the shovel

Poured boxes for surface test with plates having different paint
421 - 6 - XIII

#78 Dec 1

Tested 4 cubes of test #74 8 f

~~286~~
292
296 } 294
~~288~~

Record of cul # 80

Plate	Side	Treatment	Remarks
1	G^2	6	Q - U
4	"	2	V - X - low points stuck - U
5	"	9	Q - U
8	"	8	J - W
13	G	21	V - W - X - from paste stuck - surface [illegible] pressure - not rises
17	"	12	Q
3	G^2	19	Q
14	"	18	Q
18	"	15	Q [illegible] outer film stuck
19	"	17	Q
21	"	20	V - X - W - outer film stuck
7	"	5	J - W - best of all

Record of #81 - opened Dec 10 -

Plate	Side	Treatment	Record
23	G^2	30	Q
15	"	23	Q
22	"	34	Q
24	"	31	V - U - 31 came off
11	"	22	Q
8	"	8	almost J - U
7	"	5	V - U
20	"	11	J - W
16	"	24	J - W
9	"	33	J - W

2 - G^2 - 26 - J - W
12 - G^2 - 25 - J - W

#79 Dec 2

4 Cubes of #74 9 p

267, 372, 287, 360 } 322

#80 Dec 4

2 of #74 11 p

301, 304 } 307½

Found bones with plate for surface
421 - 6 - VI
Opened Dec 7 -

Dec 7

#81 -

Found bones with plate for surface
421 - C - IX Plate #87 of lot to used over again without drying.

Found materials (blue) #1 & #2 - Taredown
#1 - surface heated with 25 - rubber off
#2 - G^2 - Both A^2 - C - IX - M
Opened Dec 10 - not side off the 8
#1 - perfect - W - a few blankets - emulsion V - fiel #24
#2 - U - most of Bacteria traces to mineral

Record of plate test - opened Dec 14

face down No -			Remarks	
2	G^2	26	J - W - few L_2	Return End.
3	G^1	38	Z^1 - W - Z^5	
4	"	28	Q - U - partly J - Z^5	
5	"	36		
6	G^2	14	V - U - Z^3	
9	"	33	J - W - Z^5 - Z^2	Return
10	G^1	27	Q - U	
12	G^2	25	J - W - Z^2	Return
13	"	12	Q - U	
16	"	24	~~Z~~ - J - W -	Return
17	"	21	J - W - Z_4	
19	G^1	29	Q - U	
20	G^2	11	J - W - Z^2 (o few	Return
21	G^1	21	V - U - Z^4	Return

#82 Dec 10

Power on moveables #3 - standing up - 24
" #4 - face down - 25
A^2 - 6 - XIII - M

Power plate for surface - face down
A^2 - 6 - XIII - M

Power plate for surface - standing up
A^2 - 6 - XIII - M

Opened moveables on Dec 14

#3 - W - quite some Z^2 - V - ~~partly~~ partially 24 i two thick and A adhers to it, causing surface to be less pour -

#4 - Z^1 - W - one place stuck - absolutely no Z^2 see position #25

#33 Dec 14

Round rim mutulable #5 - face down
A² - 6 - XIII - M - Applied 25
pict #26

#6 - up - mid 24 -
A' - C - XI - M pict #26

Cornice #8 - down
A' - C - XI - M pict #28

Opened #5 & #6 on Dec 16 -
#5 - not as good as #4 - Attack at many places
#6 - a little better than #3 } pict. #26

Opened Cornice on Dec 17 - nearly perfect
no or 2 little places on dentals attack
and 2 " points in tympanum
See pict. #28

Result of plate test - Opened 12M

32 - 55 - U - Q - Z^3
48 - 44-25 - Z^1 - Z^4 - V
27 - 56 - W - Z^1 - Z^4 - Z^5
12 - 53 - Q - Z^3 - U
24 - 52 - Q - U - Z^3
14 - 51 - G^1 - Q - Z^3 - U
30 - 57 - U - Q - Z^3
29 - 57 - 25 - Z^2 - W - J
11 - 50 - U - Z^3 - Q
28 - 49 - U - Z^3 - Q
46 - 49 - 25 - Z^1 - W
49 - 44 - V - U - Z^3
36 - 39 - Z^1 - W
37 - 41 - Q - U - Z^3
38 - 42 - W - V - a few places stuck, but not enough to throw stone
39 - 25 - Z^1 - W

4 - A^1 - Q - too red thick enough
others "Z" but cracked - maybe too green
only 15 g -

Surface of #8 easy to rub off - not so of #7

#84 Dec 16

Poured 2 bars (16 plates) for surface
A^1 - XII - C

Poured 9 bars with bolts -

Bar	Washer	Wt. grains	Result	
1	steel - G^1	15.9	U - Z^1	Noted that all plates (min had 25) had more thickness to dust and more tendency to tarnishing
2	"	"	U - Z^1	
3	" - 25			
4	C.I. - G^1	15.9	U - Z^1	
5	"	"	U - Z^1	
6	"			
7	" - 25	15.9	V - Z^1	
8	Wood - G^1	"	U - V	
9	"			

Poured 10 washers
4 - A^1 - C - XII 2 - A^8 - 2 A^9 - 2 A^{10} -

Poured mutetables #7 - down - 25 } A^1 - XII - block C
" #8 " 24 } block M

Opened mutetables Dec 18
#7 - Z^1 - a few Z^2 - W
#8 - Z^1 - W - mucus dropped back by accident and damaged cast a little -
Result - #29

Dec 17

Plugging up test. —

Bore Mixe

1 A' - Y - one side burned get ½ way - others all ok 1"
6 " - put in mixe A - marked J -
7 " " same ——— 28 days not known
to effect bonding

Sawed to masters — all cementing of mortar

2 - A 8 }
2 - A 9 }
2 - A 10 } Opened Dec 18 - used 1 cig
2 - A 11 } all ✓
2 - A 12 }

Record of plugging test

#1 - Color fairly good - bond OK
16 - " " " "
7 " " " "

Broke blocks to judge bond Dec 23

#86 Dec - 18

Poured Course #9 - down — Suit #28
A' - 8 - XII - M -
Opened Dec 22 - 2' - IV - 10 to 2c

Plugged up holes as follows — 4 test #24

2 - A' felling - A'' facing - standard LA (2) Comes under #24
3 " " "
4 " " "
5 " " "
8 " " "
9 " " "

Record -
Bricks Blocks to Judge bond Dec 23
#2 - no bond - no Cracks in surf - bond in Course
3 " Cracks " "
4 bond no Cracks "
5 " " "
8 no bond Cracks "
9 bond no Cracks "
#9 and 8 - The Course not bonded all to surface - and between the 2 no Cracks.

Record of plate test - Opened Dec 22

35 - 46 - 25 -	Q - V
33 - 43 - 25 -	Q - V
28 - 27 - 25 -	Z' -
34 - 45 - 25	Z'
42 - 48 -	Q - V
41 - 45 - 39	Z'
47 - 44 - 25	Q - V
46 - 49 - 25	Z' - Little Z^2
48 - 47 - 25	Q - V
43 - 47 - 42	Q - V
26 - 43 - 25	Z'
44 - 48 - 42	Z' - Z^5
31 - 30 - 39	V - V - Z^3
36 - 39 -	Z'
38 - 42	Z' - Z^5
29 - 57 - 25	J - Full Z' - Little worksports

See pict #26 for stickers —

#87 Dec 19

Poured rim noticeable #10
A' - 8 - XII - M
Opened Dec 22 - Z' - W - pict. #29

Poured 2 bores with plates for surface
A' - 8 - XII - M

Poured washers -
2 - A' }
8 - A^{10} } Reinforced with 2 rings
Opened Dec 22 -
Pho 2 - A' - V - rest all V -
time broke - to green

Poured 9	bores for bolt hole test for plates
1 - steel - $\frac{1}{4}$"	211 Core - A^9 fair-poor. Good - poor
2 - "	211 Core - poor - good - none
3 - " 1"	211 Core A^{10} fair-bad-bad - some poor
4 - C. I - $\frac{1}{4}$"	A' Core - Poor poor - Crushed Out - none
5 - "	A' Core - 11$\frac{1}{2}$ fair - fair - Good - Some
Drainmant"	
7 - "	- 2$\frac{1}{2}$ 1$\frac{1}{2}$ 1 all - fair - good - Some
8 - Wood - Shellac	Q - on account of breaking of wood
9 - " - 51	Flush no Cracks

Filled Dec 28 - Pict 89

Washers - W - tub cut separator also - being low on account of oily surface. —

#88 Dec 21

Ground slab - 3" ↓

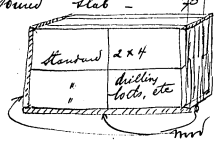


plate are finished - 57 when 2 are Castings. used C.I. washers - 1" thick pipe separator -

reinforced with 6 ℔ reinf - 2 openings - 5/8 to 3/8 7/16 D rod - bent form blue 8½ CC

A - 8 - XII - slightly M - Supper - 25 mins in Ransome mixer - 6" - dumped in buckets and mixed more and poured

Tops woven sides off Dec 22 and levelled off top. —

Took plates off Dec 24 - Specimen - a few A - near top Concrete also dense - in general good - 57 seems to have result - near top plate had crust and not filled & bolt holes mch A - 14 - seemingly good color

#39 Dec 28 All down

Formed as follows: - R' 8-XII

5'-0" Curve rakeable #1 - G^{t} 25
Lifts moved Dec 28 - 26' - a few L^{s} paint #27

Arch panel border #1 - G^{t} 25
Opened Dec 28 - 26' - some L^{s} paint #27

Rakeable & Curve #1 - G^{t} 25 paint #27
Opened Dec 28 - nearly L' - some L^{s} a few places thick

12"x12" Corner of rakeable #1 - G^{t} 45-39
new steel used
Opened Dec 28 - 26' - Color Antler - surface L paint #27

Curved windrowsill #1 - G^{t} 45-39 - new steel
Opened Dec 28 - 26' - surface L6 paint #27

Straight rakeable #9 - R' 8-XII - thickness of H.
#11 45-39
Used - for S_2 - $\frac{1}{2}$ S_2 (crane) - $\frac{1}{2}$ - S_3 } F - Q,
for S_1 - used S_4 } E - E$_2$
Opened Dec 24 - damaged #9 - bad L' - a few L^{s}
Rake #11 "
Color: slaty grey paint #26

Filled boltholes (see page 71)

Weather

Jan 9 - Cloudy - slight thaw at night
" 10 - " - damp
" 11 " " - slight rain during night
" 12 " " " " followed by frost
" 13 freezing - clear - thaw during night
" 14 slight rain a morning & freezing night
" 15 clear, thawing, freezing during night
" 16 cloudy, freezing, tin plumm snow
" 17 snow & rain, freezing
" 18 clear, freezing
" 19 " "
" 20 " "
" 21 " slight thaw
" 22 " thaw

Continued page 78

New Starts here. 71

#90 Jan - 9

Put 6 plates out in the weather at 11 P.M.

15 - G_1 -	Evenly covered with rust
31 - G_1 - 39	Numberless rusts spots
27 - G_2 -	Slightly rusted
36 - G_2 - 39	no rust - a few water drops - rust starts
37 - G_1 - oxidized	Evenly covered with rust
48 - G_1 - " - 39	Rust spots - less than 31
	under drops slight discoloration (yellowish)

Jan 12.	Jan 13
Same	Same } ice in all surfaces.
more spots -	Same
little more rusted	Same
Same	Same
Same	Same
more spots - less than 31	Same

Jan 14 - Covered with snow - thin spots over 36 - discoloration more pronounced - turning rust starts -
Jan 15 - all more rusted - 48 still covered with snow 36 - Evenly starts to rust.
Jan 16 - All except 27-36 thick rich rust, 15 & 37 evenly 27 - some rust - 36 very slight rustspots, hardly noticable
Jan 18 - Yesterday Covered with ice and snow.
Jan 19 - " "
Jan 20 - " "
Jan 21 - " "
Jan 22 - All more rusted - #36 - a few slight rustspots

#91 Jan - 14

Round Cups for impermeability test
#1, 2 & 3 — A, + XII Patent & used little pouring tank - opening too small, Cone choker in it — Lost Considerable water in mixer on account of leakage -

#4, 5 & 6 - A^2 - $S\frac{3}{8}$ XIII - mixer (mv) M_2
F_1 - E is E_1 P - b

Filled 2 bores (with Kine plates) each A, mix
#1 - Kine - G_2
#2 - " - G_1

Tested 2 cubes of test #40 - 7+83
$\frac{55}{680}$ 620

Opened Cups Jan 18 - #1, 3, 4, 6 Cracked, on account of swelling of molten core.
Opened bores -
#1 - W - surface Z - a few Z_2, on account of Z_3 and M_4 M_1
#2 - W_1 - { see picture #33

#92 Jan 18

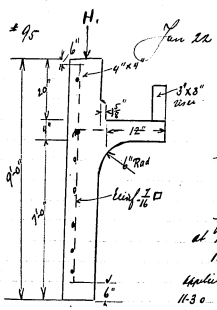
Poured bones 1 & 2 with Bineplates
A_1 - 8 - XII
#1 - G_2
#2 - G_1 - 39 } M_3 - M_1 - waxed, shaking box

Opened Jan 22 - #1 - W_1 somewhat - Z_3 - little Z_2
#2 - W_1 a little - Z_2 - Z_3 - bad Z_1
one place each. W_2 - see field #33

#93 Jan 20
Tested 2 tubes of test 4/6 6 + 84
1472 } 1333
1194 }

#94 Jan 22
Poured bones with Kinip plates
A_1 - 8 - XII
#1 - G_2 - 39 } M_3 - M_6 - waxed.
#2 G_1 - 25

Opened Jan 26 -
#1 - a little W_1 - Z_3 - 1 for Z_2
#2 - W_1 - Z_3 - Z_2 - no little places W_2
see field 33



A. - 8 - XII

First four filled all nearly - F & J - Corner up through riser topped riser off mid flush with ± pours - While waiting for 3rd pours M - all M_8 filled at 10-55 at 11-5 - applied Mg O - 11-15 do

Applied	Same at	11-20	-	11-25
11-30	11-32½	-	11-34½	- 11-36
11-37½	11-40		11-43	- 11-46
11-49½	11-51½		11-54½	11-58
11-57½	- 11-58½		12-0	12-2
12-3	12-4	12-6	12-8	12-10
12-12	12-14	12-16	12-18	12-20
12-22	12-24	12-26		

Total H, being 9 v v O - Total H about 11" Applying of H, not noticeable at Riser - Removed H. Jan 25

Took forms off Jan 26 - all U - Surface Q, for ~~reinforcement~~ X_1 - Corner in some places Q on account of X_1 Absolute no "8 - Riser broke off while removing nuts - See pictures 31 & 32

Jan 23 - damp, cloudy, thawing
Jan 24 - foggy. thawing
Jan 25 - clear weather, about freezing
Jan 26 - " " "
Jan 27 - " " "
Jan 28 - " Cold
Jan 29 - cloudy - snow & rain afternoon - snow every night
Jan 30 - snow - freezing afternoon
Jan 31 - clear - freezing
Feb 1 - freezing - clear
2 " "
3 - Snow
4 to 13 - snow, rain, freezing, etc
14 - Rain

#90 - Continued from page 74.

Jan 23 - Same as 22 -
Jan 24-25 "
Jan 26 - 36 Starts melting - 27 - not evenly melted yet
27 "
28 "
29 - Colored mist snow
30 - "
1 - 36 - 27 & 37 hardly covers with snow
All 9-11 except 36 & 27
2 - Same
3 - Cloud mist snow
12 - 36 - a few 2/10 - 27 Same

#96. Jan 26

H_2 of Cake 49 { one $3\frac{1}{2} \times 6$ - 6 + 85
one 6×6 - 10 + 87

505 } 532 826 } 875 ← neglecting Outer ½
558 } 532 805 } 875 ← neglecting Outer ½

#97 Jan 27

H_2 of Cake 52 8 + 83
795 ~ 1144

Jan 27

#98 Poured A^2. very thin, on old block, transfer surf - not melted
Also - on block - surf melted thoroughly
1st sets quick, dries quick — R_2
2nd " slow " " — R_1 } See print #33 { A B

#99 Febr 3

H_2 of Cake 58 6 + 84
425 ~ 612

#100 Febr. - 10

Board ornamental mantlepiece in plasterwork
A' - XII - 8 — 39
Fork for modern side off Febr 11
Fork moved off Febr 13 — mantles stuck
last by wetting plaster, came off fairly
good. —

#101 Febr 24

H. of Cube 74 9.84

535 B. 770

#102 Febr. 24.

Nat A - a top } mezzanines Best
" B - sides only } Very good
(bottom picture)

#102 Feb 25

Covered 2 blocks of cement, thoroughly dried, one with 14 (2 coats), one with 53 six 19 — put on windowsill in open air on Feb 26

April 5 — A - Some places 14 cracked
B - also cracked & 53 flaking off — Q

10 4	on block of	test 35
14-14	on Agm. perfect	
5-5	"	
20-5	"	bit very glossy
13-13	"	
	on grid surface	
4-4	O-K	
18-18	yellowish	
11-19	yellowish	

red tint
yellow tint
" "

105 July - 19

Slabs for color - experiments (Mr. E)
2'-0" x 2'-0" x 8" — used Chart Com.
covered with wooden disks —
#1 opened 7/21 - for green - Stuck some places
opened #2 7/23 - Stuck quite a lot spots
#3 - 7/27 - 2 little spots stuck
grapheted & cracking Comes off and
Rubbs surface

7/21
106 poured same slab - #1 slab -
cleaned plate with muriatic acid -
opened 7/27 - comes off Clean
and easy - yellow tint

107 Poured 6 cups for underpainting tech -
have 6 open 7/23 - for green
opened both plugs out of cup - 7/26 - come
out clean

7/27
108 - Poured 6 cups - opened 7/30
Came out Clean

109 Poured bar with Clear paint
opened 7/30

4/27

110 Pound 6 molecules — Ground 1-2-3 on 4-30 — mixed by green — cement mixed have been thus adding. —

111. Pound 6 clay - 2 cups for water por. test

112. Pound slab (36 squares) for color-Supplement

113 Pound 6 with glass funn.- glass bottle

114 Pound 4 cubes for comp. test

115 (wy) Tested red clay of banks.

115 – 8/2
Tried to use yellow clay – Oil had broken more dirt and grit, and quantity used is more than grey

116 – 8/5
Made 6 Bars for Mississ. tests

117 – 8/2
Formed 36 Blocks for other tests

118 – 8/9
Tested cubes of test 114
Arts. 316

119 –
120
121
122
123
124
} Analysis of sand, stone, etc. & test mesh screens.